OFFICE OF THE COMMISSIONER FOR AQUACULTURE DEVELOPMENT

"TOWARD AN APPROPRIATE FEDERAL ROLE IN AQUACULTURE"

Results of the BRITISH COLUMBIA Stakeholder Workshops

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TOWARD AN APPROPRIATE FEDERAL ROLE IN AQUACULTURE
OFFICE OF THE COMMISSIONER FOR AQUACULTURE DEVELOPMENT
Report on the Stakeholder Workshops
British Columbia - August 7 & 8, 2002

The Office of the Commissioner for Aquaculture Development (OCAD) has been directed by the Minister of Fisheries and Oceans to focus efforts upon measures that will lead to full implementation of the 1995 Federal Aquaculture Development Strategy. A key component of this mandate is the creation of a consolidated long-term strategic vision for aquaculture development in Canada and defining a renewed federal role to implement this vision.

Within this context, OCAD organized eleven regional workshops with industry, government and other stakeholders to solicit the views of those groups most directly involved with aquaculture development in Canada. In each region (excepting the Prairie meeting[1]), sessions were organized separately with (1) industry and other stakeholders and (2) government representatives. As a result of this exercise, perspectives on the fundamental elements for successful development of the aquaculture sector in Canada have been compiled, including identification of those groups responsible for delivering each of the fundamental elements. An **element** is defined as a high-level component of the vision that, ultimately, will require strategic focus for further implementation.

At each workshop, an identical process was followed, as outlined below:

- Presentation of background information pertaining to OCAD's mandate
- Consideration of the "Vision Question"
- Brainstorming
- Identification of fundamental elements
- Prioritization exercises
  - Gap Analysis
  - Relational Analysis
  - Resource Allocation

The "Vision Question"

It is 2017 and Canada has grown to realize its potential in aquaculture, a locus of investment that is well-regarded as an environmentally sustainable source of wholesome seafood that provides employment for coastal and rural communities and economic benefits to the Canadian economy in a business climate that is free of public criticism. How did we get to this point?

This report provides interim results from the British Columbia stakeholder workshops, held on August 7 and 8, 2002. Annex III includes the list of participants to the workshop, and annex I and II provide a transcription of the elements identified in these sessions. These results reflect the views and opinions of the individuals who participated in the sessions; however, they do not necessarily reflect the perspective of any organizations or associations to which these individuals belong. An analysis of the overall exercise will be available shortly through OCAD's website: http://ocad-bcda.gc.ca

[1] The Prairie workshop consisted of one session between aquaculture industry representatives, other stakeholders and the federal and provincial government representatives.

PRELIMINARY FINDINGS

1. IDENTIFICATION OF ELEMENTS & GAP ANALYSIS

Eleven (11) elements were identified in the Industry and other stakeholders' workshop while government representatives identified ten (10) elements. These elements, and their definition, are presented in Tables 1 and 2. For each element, a score is presented to reflect the collective view of the workshop delegates with respect to the current level of progress in relation to its full implementation. The percentage scores reflect the following scale: 0% - No Implementation; 25% - Falling Behind with Implementation; 50% - Neither Gaining nor Falling Behind; 75% - Moving Forward with Implementation; 100% - Full Implementation.

Table 1: Elements & Gap Analysis - Industry & Other Stakeholders

Environmental Sustainability 57%	• Science-based approach to environmental sustainability built on transparency and cooperation among all stakeholders.
Policy / Regulatory 26%	• An appropriate enabling regulatory framework based on sustainable use of the aquatic resource base supported by clearly delineated federal / provincial roles, harmonized regional implementation, accountability and staff knowledgeable in aquaculture. • Political leadership.
Security of Access 16%	• Specified long-term access to sites and aquatic biological resources for farming.
R & D 38%	• Strategic, cooperative and comprehensive approach (regionally delivered) in support of industry development and environmental sustainability.

Table 2: Elements & Gap Analysis – Governments

Sustainability 60%	• Industry adherence to BMP supported by science-based standards and regulations. • Transparency and accountability in monitoring and reporting. • Coastal development in proportion to carrying capacity.
Policy & Planning 45%	• An appropriate regulatory / legislative framework for sustainable aquaculture. • An appropriate public service culture re aquaculture. • Streamlined, harmonized and inclusive review process. • Planned approach to resource use and management. • Delineation of jurisdictional roles and responsibilities.
Siting 29%	• Harmonized planning and siting procedures with science-based standards and monitoring. • Coastal land-use planning including CEAA class-screening to achieve site targets.
R&D 53%	• Addressing knowledge gaps for industry development / competitiveness and environmental sustainability. • Strategic, collaborative, efficient and credible R&D. • Research tested at an appropriate scale.

Education 57%	• Enhanced public knowledge re aquaculture. • Professional development of industry workers. • Enhanced education of academia, support industries, and government agencies re aquaculture.
First Nations 37%	• Resolution of treaty matters. • Consultative process. • Capacity building and partnerships.
Food Safety 59%	• Development and implementation of internationally recognized and government audited stds. to ensure consumer confidence in a wholesome seafood supply.
Marketing 36%	• Generic marketing. • Openness and transparency. • Public confidence. • Joint fisheries and aquaculture marketing effort.
Social Sustainability 56%	• Socially responsible industry development.
Industry Development 26%	• Self-regulated and accountable industry. • Attractive investment climate. • Effective industry organizations.
Economic Sustainability 26%	• Revitalizing coastal economies by enabling farming to be economically sustainable.

Public Confidence / Issues 48%	• Communications / education to resolve user-group conflict and enhance community knowledge and involvement. • Inclusive approach to planning and conflict resolution.
First Nations 55%	• Enhanced participation in aquaculture (access to capital). • Resolution of treaty issues and land claims (fishing rights). • Resolution of First Nations' concerns re aquaculture.
Food Safety & Quality 62%	• Programs, procedures and infrastructure to insure consumer safety. • Funding for effective toxin and growing water surveys.
Marketing 49%	• Market-driven approach. Marketing on the sustainability initiative. Market access through international trade relations.
Compliance & Enforcement 59%	• Harmonization on federal and provincial C&E initiatives. • Investment in and reporting on C&E to ensure public confidence. • Level playing field. • Clarify / streamline regulatory regime.
Fish Health 56%	• Effective aquatic animal health programs and procedures.

2. RELATIONAL ANALYSIS (Drivers & Dependents).

This exercise served to define a cause-and-effect relationship between strategic elements. "Drivers" are those elements which, if implemented, will have an effect upon the implementation of other "dependent" elements. A very high score means that the element is a driver (DR), while a very low score means that it is dependent (DP). This does not mean that a dependent element is not important. It does, however, suggest that if two elements are identified as having a similar priority, it would be wise to consider the

leveraged influence of the driver on other elements. Tables 3 and 4 present the results from the relational analysis exercise.

Table 3: Relational Analysis - Industry & Other Stakeholders

ELEMENT	RANK
Environmental Sustainability	6
Policy / Regulatory	11 DR
Food Safety	8
Marketing	4
Education	9 DR
R&D	10 DR
Industry Development	2 DP
Security of Access	5
Economic Sustainability	1 DP
First Nations	7
Social Sustainability	3 DP

Table 4: Relational Analysis – Governments

ELEMENT	RANK
R&D	9 DR
Marketing	3 DP
Policy	10 DR
Sustainability	4
Public Confidence / Issues	1 DP
Compliance & Enforcement	8
Siting	5
Food Safety and Quality	6
Fish Health	7
First Nations	2 DP

3. RESOURCE ALLOCATION

In the resource allocation exercise, each delegate was provided with approximately 50% more resources than the number of elements. For example, if 10 elements were identified, each delegate was provided with 15 resources. The resources represented public sector resources including tax dollars, civil servants and time. Delegates were asked to allocate their resources to those elements that they deemed to be most requiring attention. All of the resources could be allocated to a single element or they could be spread among several or all elements. Results, expressed as a percentage of the total number of resources allocated for each element, are presented in Tables 5 and 6.

Table 5: Prioritization – Industry & Other Stakeholders

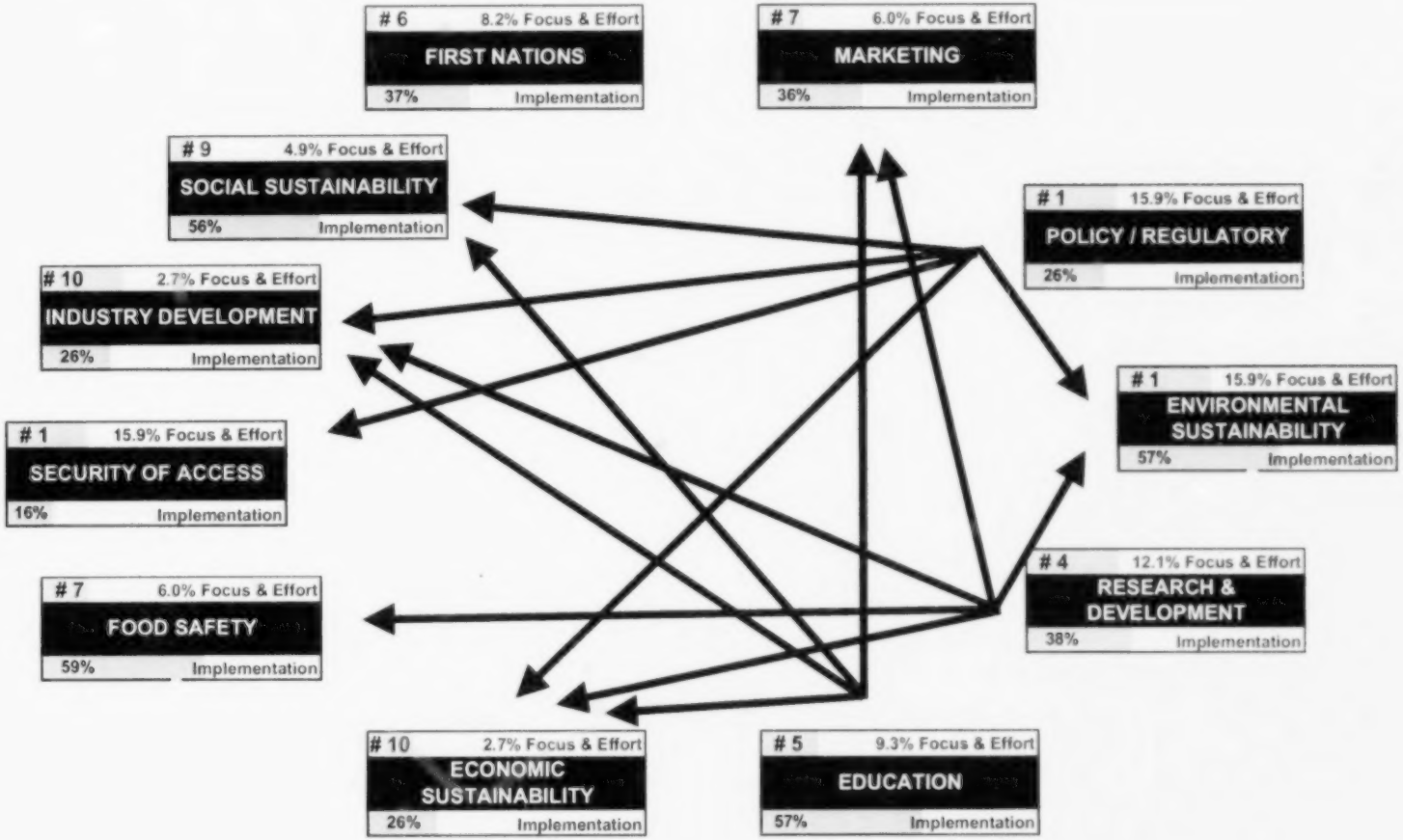
ELEMENT	SCORE
1. Environmental Sustainability	16%
2. Policy / Regulatory	16%
3. Security of Access	16%
4. R & D	12%
5. Education	9%
6. First Nations	8%
7. Food Safety	6%
8. Marketing	6%
9. Social Sustainability	5%
10. Industry Development	3%
11. Economic Sustainability	3%
TOTAL	100%

Table 6: Prioritization - Governments

ELEMENT	SCORE
1. R&D	19%
2. Policy & Planning	17%
3. Siting	15%
4. Food Safety & Quality	9%
5. First Nations	8%
6. Sustainability	8%
7. Public Confidence / Issues	8%
8. Fish Health	7%
9. Compliance & Enforcement	6%
10. Marketing	4%
TOTAL	100%

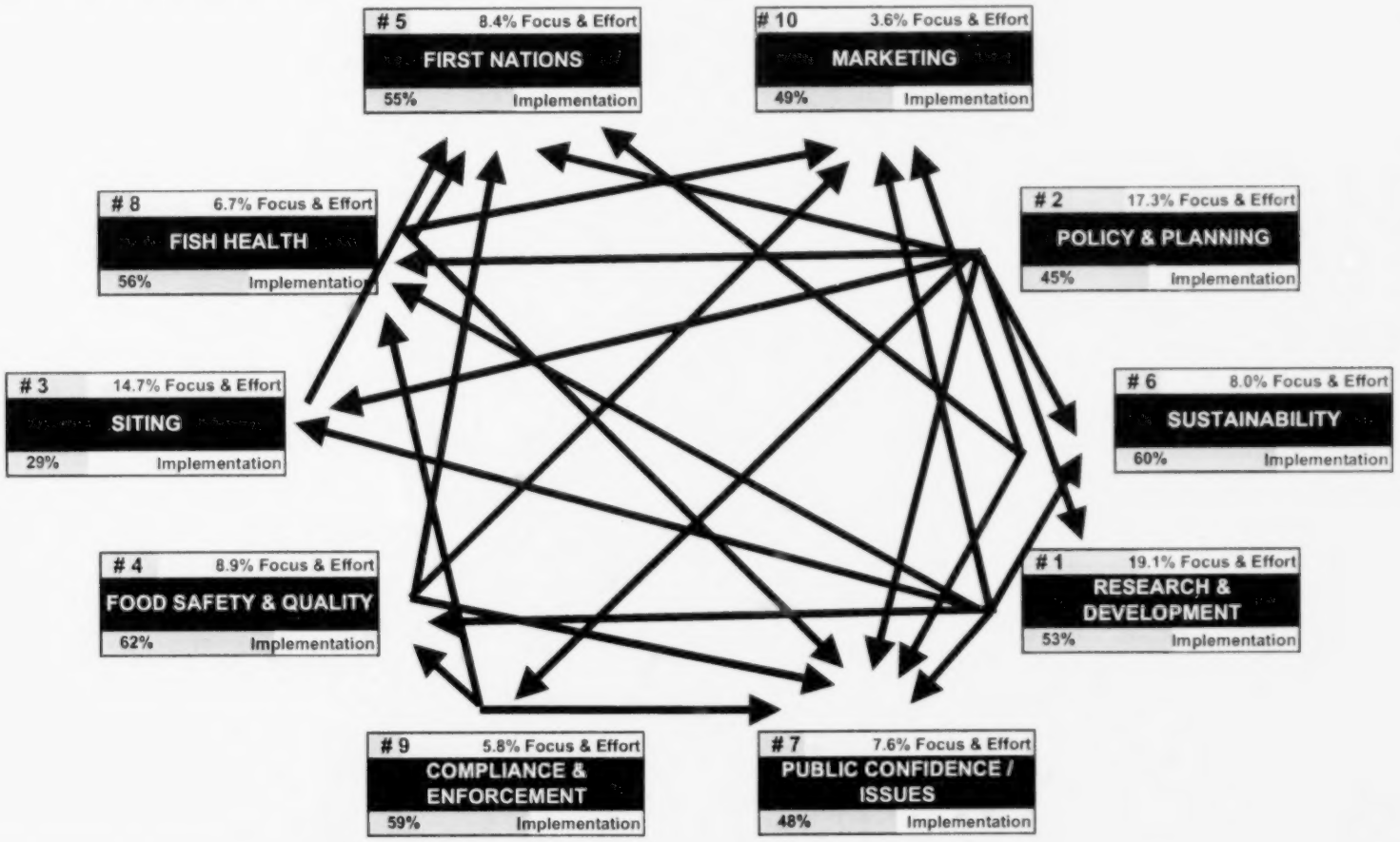
Summary Table 1.

This table is a graphic representation of the eleven elements identified in the British Columbia industry and other stakeholders meeting, along with the results of each exercise (gaps analysis, relational analysis, and resource allocation).



Summary Table 2.

This table is a graphic representation of the ten elements identified in the British Columbia government stakeholders meeting, along with the results of each exercise (gaps analysis, relational analysis, and resource allocation).



ANNEX I. REGIONAL AQUACULTURE STAKEHOLDER WORKSHOPS
INDUSTRY AND OTHER STAKEHOLDERS' PERSPECTIVES
British Columbia - August 7, 2002

The following represents the comments of individual participants attending at the workshop. It does not necessarily reflect consensus or agreement among the participants.

ELEMENTS & INITIATIVES (Transcription from Post-it notes)

1. ENVIRONMENTAL SUSTAINABILITY – Science-based approach to environmental sustainability built on transparency and cooperation among all stakeholders.

Federal Initiatives

The federal government has:

- Along with the provincial government and industry, taken the lead in transparency to get NGO trust and create problem-solving dialogue.
- Ensured environmental sustainability of the industry to maintain wild habitat and fish stocks.
- Through research, 'solved' (provided info) all outstanding scientific issues regarding the environmental sustainability of aquaculture.
- Treated aquaculture as an equal user of the marine resource.
- Seen aquaculture as a legitimate user of the marine resource.
- Dedicated funds for research into environmental issues associated with aquaculture practices.
- Respected and supported precautionary management but is not used to impede development in the absence of specific science. Research and development will develop concurrently with industry.
- Clearly delineated federal role in monitoring codes of practice.

Provincial Initiatives

The provincial government has:

- Provided equal access to resource for wild fisheries and farming. Equal environmental requirements for fishery and farming.
- Provincial monitoring codes of practice with annual statement and clear actions against contravenors.
- Has a functional and transparent auditing process for the industry performance-based standards that have earned public support.
- Taken the lead (with the federal government and industry) in being transparent to get NGO trust and productive dialogue.
- Scientifically defensible PBS that are backed by local research.

Industry Initiatives

The industry has:

- Taken the lead (with the federal and provincial governments) to be transparent to gain NGO trust and allow positive dialogue to address known problems
- Adopted and implemented Codes of Practice that are transparent and auditable.
- Fully functional performance-based standard for environmental monitoring that is integrated with the codes of practice.
- Implemented standard of practices for aquaculture allowing the industry to be sustainable.
- Invested in alternative technology that addressed the environmental issues inherent in open net cage fish farms.
- Set up community-level partnerships that involve local residents and integrate practices that consider local environmental and social interests.
- An open, transparent mechanism for collecting, monitoring and reporting environmental data including fish disease and parasite occurrence.

Other Initiatives

Other groups have:

- Conducted independent audits to ensure high compliance to environmental standards.
- All stakeholders have arrived at a definition of 'environmental sustainability' for British Columbia.
- NGOs participated in scientific analysis of food safety and environmental issues and communicates to industry and government.
- NGOs work with federal and provincial governments and with industry to work on identified problems in an open manner to achieve intent of clearly defined regulations and performance-based guidelines.

2. POLICY / REGULATORY – An appropriate enabling regulatory framework based on sustainable use of the aquatic resource base supported by clearly delineated federal / provincial roles, harmonized regional implementation, accountability and staff knowledgeable in aquaculture. Political leadership.

Federal Initiatives

The federal government has:

- DFO enforced the Fisheries Act wherever fish habitat is being altered or impacted by aquaculture.
- Adopted precautionary management principles for all development of aquaculture in accordance with the UN protocol on precautionary management, to which the federal government is signatory, and in accordance with the principles employed in commercial fisheries.
- Delegated its role in aquaculture to the provincial government.
- DFO et al has accepted their responsibility for the creation of wealth.
- Banned the import of Atlantic salmon eggs.
- Completed and harmonized the regulatory roadmap, based on outcomes rather than process: performance-based governance; one window by delineation of jurisdiction.
- Set aside long-term stable funding to promote continued stewardship resulting in community awareness, local education and empowerment.
- Fully implemented the FADS.
- Recognized that aquaculture is a fishery and as such is exempt from HADD.
- Removed aquaculture from DFO mandate and moved to agriculture.
- Done class screening for CEAA and tenures are processed within 90 days.
- Assumed leadership role in regulation of all marine activities.
- The CEAA process implemented the vision and direction of the federal policy on aquaculture.
- Ensured that all aquaculture operations went through full environmental assessments before beginning operation.
- Treated shellfish aquaculture equally Canada-wide through strong policy direction.
- DFO gives responsibility for aquaculture to Agriculture Canada.
- Developed a fish health protection policy, which provides protection to indigenous species without unduly constraining aquaculture development and diversification opportunities.
- Rationalized shellfish and fish transplant permitting to allow safe aquaculture diversification.
- A policy to support polyculture.
- Completed an ICZM program, implemented the Oceans Act commitments (this permits industry certainty of areas in which it can operate and minimizes user conflicts).
- Changed the regulatory framework and now Canadian companies own 50% of aquaculture production.
- Is a member of a joint federal / provincial Aquaculture Regulatory Commission.
- Hired personnel that understand (i.e. have aquaculture experience) aquaculture operations and business, OR DFO gives responsibility for aquaculture to Agriculture Canada.
- DFO policies are based on sound science and not on an individuals interpretation.
- Allows the province to be the lead agency in aquaculture management. Aquaculture is regulated as part of a 'whole fisheries concept' along with recreational, traditional and commercial fisheries.

- Finally resolved that the wild fishery is for sport and First Nations only.
- Implemented a regulatory scheme that incorporates principles of sustainability and public accountability. The industry monitoring results MUST be kept by government and available to public.
- Budgeted adequate resources to do their regulatory work, research and basic monitoring.
- DFO Pacific Region has rewritten job descriptions of 'fishery managers' to facilitate aquaculture and hold staff accountable.
- Integrated Coastal Management Plan in place and is agreed by all shareholders.
- DFO has resolved its apparent conflict of interest regarding the conservation of wild fisheries and the promotion of aquaculture.
- OCAD implemented full consultation with the established advisory committees for each commercial fishing sector and the BC Seafood Alliance.
- Facilitated the performance of thorough environmental, economic and cultural-impact analysis of aquaculture in accordance with the spirit and letter of the precautionary management approach.
- Adopted a solutions-based approach to problem areas as they arise (political imperative).
- Required mandatory labeling of all farmed fish, shellfish, etc.
- Worked with industry and province to develop policies and guidelines for 'new species' in aquaculture (by 2003).

Provincial Initiatives

The provincial government has:

- Taken a leadership role in coastal planning by designating areas for shellfish aquaculture.
- Completed coastal resource plans for all areas of the BC coast.
- Succeeded in decreasing bureaucracy and non-necessary regulation, allowing the industry to achieve the lowest C.O.P. figures in the world.
- Encouraged multiple-species farming.
- Adopted a schedule to convert net-cage fish farms to closed-loop technology with waste treatment.
- Taken a leadership role in aquaculture.
- Relinquished all attempts to regulate in marine environment (except maybe seabed leases).
- Became a member of a joint federal / provincial Aquaculture Regulatory Commission.
- Facilitated aquaculture land reserves.
- Integrated Coastal Management plan is in place and agreed to be by all stakeholders.
- Regulated aquaculture in a non-prescriptive, performance-based manner.
- finally come to an understanding that there is a difference between aquaculture and the wild fishery.
- Policies in place that guarantees the state of Alaska that no escaped Atlantic salmon will reproduce in Alaska.
- Policies in place to encourage local hiring for aquaculture tenures and processing plants.
- Processed shellfish tenure application in less than a year with fees that reflect long term financial benefits to coastal communities.
- Set aside adequate resources to manage their aquaculture responsibilities.
- Completed regulatory roadmaps completed and harmonized based on outcomes rather than process: performance-based government; real one window by delineation of jursdiction.
- Provincial health vets have full records of any aquaculture disease outbreaks. These are analyzed and openly available to industry, governments and public.
- Rationalized shellfish and fish transplant permitting to allow safe aquaculture diversification.
- Worked with federal government and industry to develop policies and guidelines for 'new species' in aquaculture (by 2003).

Industry Initiatives

The industry has:

- Adopted poly-culture to optimize on infrastructure

Other Initiatives

Other groups have:

- First Nations are fully involved in the coastal resource management planning.
- Regional districts have harmonized their water zonings with ICZM.

3. FOOD SAFETY – Development and implementation of internationally recognized and government audited standards to ensure consumer confidence in a wholesome seafood supply.

Federal Initiatives

The federal government has:

- A clear, open and transparent federal role in auditing industry performance-based standards, which has gained the support of growers and the public.
- Strengthened the role of the CFIA as an independent agency, certifying product as safe and healthful.
- (CFSI etc.) Has agreed with international product safety (feed and product) standards. Products are independently certified as environmentally sustainable and safe for human health.

Industry Initiatives

The industry has:

- A world class traceability and food safety record. The consumer feels warm, fuzzy and safe when buying Canadian-farmed seafood.
- Implemented a fully open and transparent traceability standard for feed and product that exceeds established international standards.
- Widely achieved ISO certification and related product labeling.
- The seafood industry has effective organizations to resolve food safety, market development, etc.

Other Initiatives

Other groups have:

- NGOs participated in scientific analysis of food safety issues and communicate to industry and government.

4. MARKETING – Generic marketing. Openness and transparency. Public confidence. Joint fisheries and aquaculture marketing effort.

Federal Initiatives

The federal government has:

- Supported generic seafood marketing to same level as all other agriculture products.

Provincial Initiatives

The provincial government has:

- Supported the aquaculture industry through marketing and public information campaigns protecting our international competitive status.
- Provincial / Federal / Industry partnership in marketing programs that maintain supply / demand balance and ongoing economic health of the industry.

Industry Initiatives

The industry has:

- Developed a generic marketing plan, promoting BC seafood.
- By 2017, adopted standards for truth in advertising and complies with those (to raise public confidence).
- Seafood industry has organizations that can deal with marketing issues.
- Became open and accountable. It obeys the law and 'opens its books' to permit public (and NGOs) to have confidence.

- A joint marketing board for BC seafood, composed by both wild and farmed seafood producers.

Other Initiatives
Other groups have:
- First Nations played and active management role in the aquaculture industry. Marketing through First Nations will make Canadian aquaculture products recognizable and sought after internationally.

5. EDUCATION – Enhanced public knowledge re aquaculture. Professional development of industry workers. Enhanced education of academia, support industries, and government agencies re aquaculture.

Federal Initiatives
The federal government has:
- Implemented job-training programs to support First Nation's involvement in aquaculture.
- Focused on post-graduate education and research supporting aquaculture: grad students, chairs, facilities

Provincial Initiatives
The provincial government has:
- Supported training and education for potential employees in all aquaculture industries. There are partnerships with industry and other stakeholders.
- Along with the federal government, supported communication of sound science.

Industry Initiatives
The industry has:
- Cooperated with all levels of gov't in training and educational needs for employees and local community residents.

Other Initiatives
Other groups have:
- Public opinion has recognized need for market balance between aquaculture production and wild fishery production, in terms of ecosystem stability and environmental sustainability.
- Public opinion is resolved regarding potential of Atlantic salmon to establish stable populations in pacific coast watersheds by analyzing survival time-trends where founder colonies have appeared.
- NGOs adapt true scientific principles and react accordingly using science, not following the 'heart'.
- Public accepts the fact that aquaculture is farming and should be regulated as such.
- Universities have facilitated the creation of knowledge to answer aquaculture sustainability (environment) issues and provide a depository for this info and a forum for informed debate and discussion.
- Universities and colleges have expanded their aquaculture programs enabling the industry to perform at a higher standard.
- Universities assume integrated role for creation of knowledge to facilitate aquaculture development and for training and technology transfer (i.e. "capitalizing on wealth creation from knowledge").
- Community colleges have put in place training programs so that local people can compete for aquaculture positions in their area.

6. R&D – Strategic, cooperative and comprehensive approach (regionally delivered) in support of industry development and environmental sustainability.

Federal Initiatives
The federal government has:

- Along with the province and industry, partnered to conduct comprehensive research programs to document both positive and negative ecological interactions of aquaculture operations and a communications program to get knowledge to public.
- Supported production of independent peer-reviewed science on critical environmental and food safety issues (e.g. disease transfer to wild stocks, benthic impacts, and parasite transfer).
- Launched and sustained a national aquaculture R&D program in association with provinces: husbandry, feed development, systems engineering, environmental management, NRC centers, DFO research, university chairs, graduate studentships, R&D support to industry
- Through federal research, documented accurately any transference that has occurred over 15 years of parasites from farmed to wild fish, together with extent of natural outbreaks of parasite 'loads' (e.g. sea lice).
- Invested money into researching the impacts of escaped farmed Atlantic and Pacific salmon on wild fish, the impacts of waste from fish farms and the potential for disease transfer.

Provincial Initiatives

The provincial government has:

- Set priority on aquaculture R&D as a goal for provincial universities and colleges.

Industry Initiatives

The industry has:

- Developed systems on land to allow the rearing of non-traditional species (recirc. / reuse) SW and FW as well as exotic species.
- Provided with R&D and technical support.

7. INDUSTRY DEVELOPMENT –Self-regulated and accountable industry. Attractive investment climate. Effective industry organizations.

Federal Initiatives

The federal government has:

- Implemented a functional policy to access wild resources for industry development: broodstock, capture and grow-out.

Provincial Initiatives

The provincial government has:

- With the federal government, provided funding or enabling mechanisms to adequately fund industry organizations and programs.

Industry Initiatives

The industry has:

- Small-scale local aquaculture operations have successfully established niche markets, which are not amenable to competition from multinational operations.
- In partnership with government, has implemented a series of operating farm-sites for public education, R&D, training and technology transfer.
- Invested in alternative technology that addresses the environmental issues inherent in open net cage fish farms.
- Canadian industries bought back its industry and cut back to sustainable levels no longer forced to expand to a foreign concern.
- large seafood trading companies are involved in aquaculture sales and market development. Aquaculture is attracting CD, $ investment. Canadian ownership of large companies.
- Been allowed to operate in a globally competitive environment.
- Codes of practice are followed and enforced by industry not government.
- Provided visionary leadership in achieving a successful, growing and diversified industry.

Other Initiatives

Other groups have:

- NGOs focus on aquaculture has been reduced to very little participation as a result of the public's regained trust in governments.
- industry organizations (i.e. BCSGA, BCSFA, SPAA . . . not limited to) have evolved to organizations that successfully promote product to public.

8. SECURITY OF ACCESS – Specified long-term access to sites and aquatic biological resources for farming.

Federal Initiatives
The federal government has:
- Settled treaties with First Nations.
- Settled all First Nations' Treaties.
- Regional (Pacific) DFO policy encouraged species diversification in a timely manner to access markets.
- Common property issues regarding Canadian marine waters have been resolved by means of public process, stakeholder involvement and policy review, so that apparent conflicts for aquaculture development are resolved in new legislation under the Canada Oceans Act.
- Changed its policy to allow for 'bankable' length access to fisheries that will have asset value.

Provincial Initiatives
The provincial government has:
- Changed its policy to allow for 'bankable' length tenures with an asset value.
- Settled treaties with First Nations.
- Settled all outstanding Treaties with First Nations.

Other Initiatives
Other groups have:
- First Nations have settled treaties.

9. ECONOMIC SUSTAINABILITY – Revitalizing coastal economies by enabling farming to be economically sustainable.

Federal Initiatives
The federal government has:
- Recognized issues of farm scale that are essential to economic sustainability.

Provincial Initiatives: The provincial government has:
- Recognized issues of farm scale that are essential to economic sustainability.

Industry Initiatives: The industry has:
- has revitalized many ex resource-based coastal communities.
- Canadian-farmed salmon, specifically BC salmon / finfish / seafood, is viewed globally as a premium product sought after internationally and locally.
- Diversified in multiple-species production: market driven, a ten-fold increase in tonnage produced, supported by International and Canadian investment.

10. FIRST NATIONS – Resolution of treaty matters. Consultative process. Capacity building and partnerships.

Federal Initiatives
The federal government has:
- Acted to settle First Nations' land claims.
- Developed a process for consulting First Nations on aquaculture policy, regulations and planning.

Provincial Initiatives

The provincial government has:

- Aquaculture sites are not located in areas where First Nations are opposed.
- Reached a settlement with First nations regarding the land claim issue which allows business to flourish in Canada.

Other Initiatives

Other groups have:

- First Nations have developed the capacity to respond to requests for consultation.
- All BC First Nation's land-claims have been settled, so that resolution of aquaculture siting issues is not in conflict with the issue of abrogation of rights (re land claims).

11. SOCIAL SUSTAINABILITY – Socially responsible industry development.

Federal Initiatives

The federal government has:

- Supported a long-term stewardship level of training and education for industry and citizens.

Provincial Initiatives

The provincial government has:

- Supported a province-wide stream-keepers program in cooperation with industry, other governments and local communities.
- Aquaculture sites are not located in areas where communities oppose them.

Industry Initiatives

The industry has:

- Supported a province-wide stream-keepers program in cooperation with all levels of government and local communities.
- Developed safe feed sources and feed sources that are socially responsible (i.e. not 'robbing' 3rd world countries of necessary protein sources).
- The salmon farming industry has earned the confidence of the public and is a cornerstone of economic prosperity in remote coastal communities.
- Aquaculture is responsible to stakeholder input and continues to gain confidence and earn respect of other marine users.

Other Initiatives

Other groups have:

- Stakeholders take pride in Canada's ability to support aquaculture.
- Eco-tourism has embraced aquaculture as part of their tour packages. They provide education as to food sources.
- Communities and companies have set up local committees to handle differences.
- Communities include First Nations and more First Nation communities.

ANNEX II. REGIONAL AQUACULTURE STAKEHOLDER WORKSHOPS
GOVERNMENT DELEGATE PERSPECTIVES
British Columbia - August 8, 2002

The following represents the comments of individual participants attending at the workshop. It does not necessarily reflect consensus or agreement among the participants.

ELEMENTS & INITIATIVES (Transcription from Post-It notes)

1. RESEARCH AND DEVELOPMENT – Addressing knowledge gaps for industry development / competitiveness and environmental sustainability. Strategic, collaborative, efficient and credible R&D. Research tested at an appropriate scale.

Federal Initiatives
The federal government has:

- Permanent allocation of funding towards directed aquaculture research in both regulation and assistance roles.
- R&D investment to ensure competitive edge and to ensure that Canada remains an expert in sustainable aquaculture.
- Addressed R&D needs to encourage development of industry and address environmental concerns related to industry and its impacts on wild stocks and habitats in collaboration with province.

Provincial Initiatives
The provincial government has:

- MAFF instituted the Provincial Fish Breeding Centre housing and extensive gene bank and strain-monitoring database.
- Provincial 'performance-based' regulatory approach has a sound basis in defensible science.
- Provided seed money for aquaculture operations.

Industry Initiatives
The industry has:

- Developed new technologies to reduce, replace or mitigate the use of disinfectants in an effort to minimize their impact on the environment.
- Shellfish industry has developed new technology to reduce the reliance on foreshore space.
- Developed industrial-scale shellfish hatcheries at key locations on the coast, producing enough inventory to meet domestic production as well as exports worldwide.
- Implemented utilization of biotechnology to address concerns related to escapes. i.e. all-female stocks, triploidy, gynogenetics, etc.
- Actively funded R&D for both development of industry and to address environmental concerns.

Other Initiatives
Other groups have:

- Academic committees provided independent peer-reviewed research on knowledge gaps related to aquaculture.
- Education / research. i.e. knowledge: academic and technological institutions provided programs / courses relevant to the industry; conduct necessary research in support. Training.

2. MARKETING – Market-driven approach. Marketing on the sustainability initiative. Market access through international trade relations.

Federal Initiatives

The federal government has:

- Secured access to international markets for the aquaculture industry.

Industry Initiatives

The industry has:

- Established markets for products: reputation for quality / safety.
- Product development consistent with market demand.
- Increased its market share through exploitation of the unique qualities of the BC / Canadian industry. i.e. environmental sustainability.

3. POLICY AND PLANNING – An appropriate regulatory / legislative framework for sustainable aquaculture. An appropriate public service culture re aquaculture. Streamlined, harmonized and inclusive review process. Planned approach to resource use and management. Delineation of jurisdictional roles and responsibilities.

Federal Initiatives

The federal government has:

- Read the 1988 MOU on aquaculture and puts all effort on R&D as per the MOU, and the province focuses on its responsibility.
- Stopped all work as it relates to 'enhancement' of shellfish harvesting (enhancement is not fishing and is really aquaculture) and is fully supportive of shellfish aquaculture.
- DFO's review of aquaculture applications meets the province approval process / target; turn around times.
- Maintain majority Canadian ownership.
- Provided a definition on the word 'significant' and 'appropriate distance' through sound science.
- Resolved systemic disparity within and between federal agencies so that aquaculture was treated in a fair and consistent manner across departments.
- Made broodstock available for industry, especially in new species development (i.e. Abalone, black cod).
- DFO completes development and consultations of Wild Salmon Policy including implementation guidelines for aquaculture and enhancement.
- Federal government staff has accepted aquaculture as a sustainable industry and supports it through new relationship with industry / government.
- Resourced a streamlined regulatory review process which is harmonized with the provincial review process in terms of requirements and timelines.
- The federal role in supporting sustainable aquaculture is clear and procedures are clear in order to foster a stable investment climate for industry (certainty, clarity of regulatory regime and approvals process, long-term stability) (roles)
- Acknowledged the provinces and territories constitutional paramouncy over aquaculture management and control.
- Developed a regulatory framework for ocean ranching.
- Federal government and province have resolved 'issues' over access to broodstock for 'new' culture species.
- Worked efficiently with the provincial government and with stakeholders on coastal resource use planning.
- Assessed environmental impacts of aquaculture as part of the marine ecosystem, as opposed to site specific.
- Clearly elaborated policies to facilitate sustainable development of a diversified industry (shellfish, finfish, sea ranching, etc.).
- DFO created a corporate culture that fosters and advocates for aquaculture.
- Federal and provincial governments have completed Integrated Coastal Planning that identifies areas that are suitable for aquaculture industry growth: completed coastal data sets, share with province.

- Federal and provincial governments have set aside all sensitive areas to protect wild stock and other values from aquaculture development. Flip form MPAs to a large area protection and small areas for harvest / aquaculture
- Amended the fisheries act to reflect reality of the aquaculture industry and its legal right to resources.
- Acknowledged that fisheries regulations do not apply to all aquaculture products.
- Federal and provincial governments have resolved issues of claim of custody over new shellfish species i.e. Geoducks, Horseclams.
- Engaged in coastal resource planning to identify areas suitable for aquaculture and set aside to protect wild stock values.
- Respected the NWPA permit issuance from the CEAA process. Allows Coast Guard to provide comments to the province in a timely manner so that a provincial land-use decision can be made.
- Evaluated and adapted 'best practices' from other global jurisdictions (learing from other's experience).

Provincial Initiatives

The provincial government has:

- Maintained majority Canadian ownership.
- Resolved land-use (zoning) with local governments – reduces duplication of land-use decisions.
- Clear policy and technical criteria for HADDS supported by scientific research.
- 100% authority for all land-use decisions including zoning (not R.D.s).
- An aquaculture policy that recognizes the wild fishery before decisions are made on land allocations. But there are set objectives when land can be removed from wild fishery to the aquaculture industry.
- Worked effectively with federal government on coastal resource use planning and with stakeholders
- Resolved systemic disparity within provincial agencies so that aquaculture was treated in a fair and consistent manner across ministries.
- Established ALRs (aquaculture land reserves).
- Consulted thoroughly with all users in developing integrated coastal resource use plans which include aquaculture.
- Province and federal governments harmonized a coastal zone management plan that identified areas suitable for aquaculture that met industry's needs for growth: completed coastal data sets, share with province.
- Province and federal government have set aside all sensitive areas to protect wild stocks and other values from aquaculture development. Flip from small MPAs to large area protection and smaller areas for harvest / aquaculture.
- Established clear Riparian Rights guide that has resolved private upland and aquaculture industry conflict. Industry is able to farm without being questioned by upload owner on a monthly occurrence.
- Recognizes aquaculture as an agriculture industry producing a proprietary seafood product.
- BC annexed Alaska and Washington states, resolving trade competition issues and non-tariff barriers.
- Worked with local governments and municipalities to clearly delineate responsibilities and jurisdiction with regards to zoning and site application reviews. Each level of government confines it's reviews to those matters that are in their jurisdiction.
- Policy outcomes should be aligned between governments and stakeholders and agreed through CCFAM.
- Positions of various provincial ministries on aquaculture issues are consistent and harmonized.
- Evaluated and adapted 'best practices' from other global jurisdiction (learning from others' experience).

Other Initiatives

Other groups have:

- NGOs are broadly supportive of a diversified and environmentally sustainable aquaculture industry with: sound regulatory regime, good environmental practices, attention to issues like escapes, genetics, disease risks.
- NGOs have actively and positively participated in the development of an aquaculture policy for the province and federal government.
- NGOs supported the establishment of protected areas for wild fish values and other values, and the allocation of other lands / water for aquaculture use

4. SUSTAINABILITY – Industry adherence to BMP supported by science-based standards and regulations. Transparency and accountability in monitoring and reporting. Coastal development in proportion to carrying capacity.

Federal Initiatives

The federal government has:

- Developed adequate analytical / modeling tools to assess regional 'carrying capacity'.
- Resolution (or as close as possible) to sustainability of wild species while regulating aquaculture development to support the industry in an environmentally sensitive manner.
- Environmental sustainability and consumer confidence. All parties involved implement an integrated ecosystem-based assessment of aquaculture development. Federal government supports quantitative assessments of wild fish population and habitats. 10-year assessment and communication strategy. Marine ecosystem sampling and assessment.
- Continued to invest in monitoring and research into the environmental impacts of escaped farmed fish. Clear info that has scientific credibility is widely available. The management approach of governments to escapes has adapted to respond to the results of this monitoring. Public confidence has increased.
- Worked with partners to identify full potential for a diversified aquaculture industry based on sustainable aquaculture practices.

Provincial Initiatives

The provincial government has:

- Continued to invest in monitoring and research into the environmental impacts of escaped farmed fish. Clear info that has scientific credibility is widely available. The management approach of governments to escapes has adapted to respond to the results of this monitoring. Public confidence has increased.
- Developed environmental standards and regulations for aquaculture development.

Industry Initiatives

The industry has:

- Developed methodologies for aquaculture, which minimize environmental impacts.
- Industry is economically sound and meeting all sustainable goals set by the government.
- Resolution (or as close as possible) to sustainability of wild species while permitting environmentally responsible and financially viable aquaculture industry
- Improved culture and husbandry to minimize environmental impact; use of therapeutants is minimized from improved fish health.
- Environmental sustainability and consumer confidence. (10 year assessment and communication strategy) All parties implement an integrated ecosystem-based assessment of aquaculture development. Industry contributes production site data and localized monitor as required by guidelines. Economic data for assessment.
- Recognized need to pursue its development in an environmentally sustainable way and to show public it is a concerned, responsible sector with strong sensitivity to environmental issues.
- Reduced its ecological footprint through application of best available technology, training, investment in infrastructure, research, etc., leading to decreased levels of escapes, wastes, habitat impacts and improved fish health.
- Secured sufficient capital to develop infrastructure: facilities, sites development; transportation, broodstock, processing, feed, fish health.

- Adapted and followed an internal code of 'best practices' (to address good husbandry, disease control, escapes, etc.) to demonstrate a responsible attitude to environmental stewardship.
- Developed the technology and human resource practices that lead to nominal levels of stock escape accounting for a very small percentage of overall production (<.1% production). Catastrophic or large number escape incidents (<20,000 pcs.) have been virtually eliminated.
- Provided timing accurate and comprehensive information on economic, environmental and social performance: to investors, government, stakeholders.

Other Initiatives

Other groups have:

- Environmental sustainability and consumer confidence (10-year assessment and communication strategy) All parties implement an integrated ecosystem-based assessment of aquaculture development. Academics, NGOs, etc. participate on science programs, oversight, and social / economic assessments. Funding through control agencies (NSERC, etc.).
- First Nations are an active participant and have many successful aquaculture operations.
- Worked with governments to ensure environmental standards in aquaculture industry.

5. PUBLIC CONFIDENCE / ISSUES – Communications / education to resolve user-group conflict and enhance community knowledge and involvement. Inclusive approach to planning and conflict-resolution.

Federal Initiatives

The federal government has:

- Limited the impacts of aquaculture in a variety of ways (mostly industry best practices) and are situated alongside other accepted environmental impacts.
- Guidelines to situate aquaculture within conservation's protection mandate.
- Made science and research information readily available to the public through media, Internet, public
- Engaged in effective communication with public and stakeholders, First Nations, to explain benefits and address public concerns.
- Successfully addressed the environmental, social & cultural issues using multidisciplinary conflict resolution approaches, through the National Aquaculture Forum, composed by both governments, First Nations, industry, NGOs & ENGOs.
- An effective strategy for the use of disinfectants, which has been supported by research and public acceptance.
- An expanded role in food and safety (inspection, food safety) to better support development of sustainable aquaculture industry, acquire data related to product safety and provide public reassurance.

Provincial Initiatives

The provincial government has:

- environmental Sustainability and Consumer confidence (10 year assess and communication strategy) All parties implement an integrated ecosystem-based assessment of aquaculture development. Provincial monitoring of site compliance, established methodologies and waste monitoring.
- Proactively presented objective clear information to the public, readily available through Internet, media, publication, etc. This information heads to improved levels of public confidence in the industry and its sustainability.
- Engaged in effective communication with public and stakeholders to explain benefits and address public concerns.

Industry Initiatives

The industry has:

- Engaged in effective communications with public and stakeholders to explain benefits and address public concerns.

- Been able to reduce escapes to zero.
- Actively developed relationships with other users and public to gain public confidence in the sustainability of the industry and its place in the environment.
- Opened up the dialogue and opportunity for NGOs to have access to sites / operations on a regular, but scheduled time frame.
- Developed a method to tag all aquaculture products to address escapes and international tracking / delivery.
- Developed a code of practice that exceeds all government requirements and has boosted consumer confidence.
- Takes ownership and initiative in dealing with "on farm" performance (COP, ISO, Certification, Tracebility).
- Developed strong and effective industry associations played a role in codes of practice compliance monitoring.

Other Initiatives

Other groups have:

- Public debate on use of foreshore for leases vs. public access.
- Greater acceptance by ENGOs through improved regulatory framework, monitoring and enforcement.
- University and other bodies with balanced scientific perspective have acted as public 'clearing house' for public debate on controversial issues to allow / facilitate informed decision-making.
- Coastal communities have been actively involved in coastal planning and decision making and have made decisions about land and water use in their areas.
- Resolution of user conflicts so that there is community support for aquaculture.
- Stakeholders provide constructive informed input to the performance of the industry through established, credible and regular consultation process at the national, provincial, and local levels.
- Developed a food diet for finfish that has full support of NGOs.

6. COMPLIANCE AND ENFORCEMENT (C&E) – Harmonization on federal and provincial C&E initiatives. Investment in and reporting on C&E to inure public confidence. Level playing field. Clarify / streamline regulatory regime.

Federal Initiatives

The federal government has:

- Worked with province to harmonize regulatory regimes, develop agreed regulatory protocols, while respecting jurisdictions and authorities.
- Harmonized the Fisheries Act with the provincial waste management act through policy decision and regulatory change.
- Clarified and streamlined the regulatory approval process.

Provincial Initiatives

The provincial government has:

- Increased the fine amounts that are available for use against delinquent farm aquaculture operators.
- Harmonized approach to sustainable development of industry with federal government. By respecting each other's rules, reaching accord where possible and achievable, and coordinating activities.
- Developed a C&E monitoring program that provides NGO / public full confidence in the aquaculture industry and the province as a regulator.
- Continued investment in C&E to achieve high levels of compliance with the effective regulatory framework leading to improved public confidence in the industry.
- Enforced regulations to maintain environmental standards in industry.
- Clarified and streamlined the regulatory approval process.

Industry Initiatives

The industry has:

- Participation (financially) in monitoring costs and contaminants / toxin testing
- Industry codes of practice and company-specific policy (e.g. ISO standards) that are consistent with provincial and federal regulation and policy. These industry codes are used to train staff, effectively maintain equipment, etc. which leads to higher level of compliance with regulation and increased public confidence.
- Been able to demonstrate compliance with relevant provincial and federal regulations.

Other Initiatives

Other groups have:

- First Nations are part of the aquaculture C&E conducted by the federal and provincial governments.

7. SITING – Harmonized planning and siting procedures with science-based standards and monitoring. Coastal land-use planning including CEAA class-screening to achieve site targets.

Federal Initiatives

The federal government has:

- Timely and effective processes and standards for siting of aquaculture sites and species that are harmonized with provincial governments.
- Implemented coastal zone management harmonized with coastal land-use plan, which includes enabling siting of aquaculture in a publicly accepted framework.
- Harmonized siting standards with the provincial government that include generally agreed upon and clear siting criteria, baseline habitat sampling standards, inventory requirements etc. These are widely used, established in policy, and well communicated to proponents.
- DFO / MAFF / CEAA / Stakeholders developed and adopted joint aquaculture project review and approval process, thereby speeding up the process reducing the cost and harmonizing policy.
- Clearly established in government policy the types of salmon streams that must be spatially separated from salmon farms, and how far this spatial separation must be (e.g. 1 km).
- CEAA is done coast wide as class screening and enables applications to meet the provincial approval process / target turn-around times.
- Established distance from a defined salmon stream.
- Federal government and province agrees to the land-use allocation to support the aquaculture development targets.
- Developed a site screening process that satisfied CEAA requirements and at the same time met industry's development needs and timelines.

Provincial Initiatives

The provincial government has:

- Targeted program to identify required sites for aquaculture expansion; meet specified M&E requirements.
- Developed and implemented coastal land use plans that are based on harmonized siting standards, create opportunities for aquaculture development, and are leading to improved efficiencies for siting aquaculture operations.
- Provincial and federal government agreed to the land use allocation to support the aquaculture development targets.
- identified freshwater lake opportunities for the expansion of aquaculture industry.
- Harmonized siting standards with the federal government that include generally agreed upon and clear siting criteria, baseline sampling standards, habitat inventory requirements, etc. These are widely used, established in policy and well communicated to proponents.

Industry Initiatives

The industry has:

- Moved to Chile but still send money home.

8. FOOD SAFETY AND QUALITY - Programs, procedures and infrastructure to ensure consumer safety. Funding for effective toxin and growing water surveys.

Federal Initiatives

The federal government has:

- Expanded the CSSP to include the central and north coasts.
- Secured sufficient funding for contaminant and toxin monitoring.

Provincial Initiatives

The provincial government has:

- Secured sufficient funding for contaminant and toxin monitoring.
- Effective standards in place for food safety and animal health to protect human health and markets. The programs are delivered in a cooperative, efficient and cost-effective program with provincial agency and industry.

Industry Initiatives

The industry has:

- Industry product quality accepted by all as good as wild product through successful marketing and quality control.
- Industry and First Nations established shellfish depuration plants in central and northern communities.

9. FISH HEALTH – Effective aquatic animal health programs and procedures.

Federal Initiatives

The federal government has:

- DFO treated transplants as true science issues related to fish health issues and not influenced by industry (e.g. Geoducks).
- Federal agencies have coordinated the work at regulatory regime for disease management and public health. It has been linked to provincial protocols for fish health.
- Sound fish health protection regulations in place and an effective regime to respond quickly to disease outbreaks and minimize impacts.
- Full implementation of National Aquatic Animal Health Act to address exports and imports issues.
- Developed a regulation for use of vaccines.

Provincial Initiatives

The provincial government has:

- Worked with federal government to develop regulatory framework for use of vaccines, and has led implementation through appropriate instruments such as terms and conditions of license for aquaculture facilities.

Industry Initiatives

The industry has:

- Reduced fish health issues to meet all targets set by government and is supported by NGOs / First Nations.
- Cooperated with the federal government to develop, through research, vaccines to address the fish health concerns.

10. FIRST NATIONS – Enhanced participation in aquaculture (access to capital). Resolution of treaty issues and land claims (fishing rights). Resolution of First Nations' concerns re aquaculture.

Federal Initiatives

The federal government has:

- Provided capital access for First Nations to initiation operations.
- Protection of First Nations' right of access to wild fisheries.

Provincial Initiatives

The provincial government has:

- Along with First Nations, equitably resolved land claim and treaty issues.
- Protection of First Nations' right of access to wild fisheries.

Other Initiatives

Other groups have:

- A significant number of First Nations are active participants in the industry and have made decisions to engage in sustainable aquaculture.
- First Nations have resolved treaty issues in the marine environment.
- First Nations: agreements in place, agreement on acceptance / terms / involvement in aquaculture.
- First Nations have a significant role (influence) in BC aquaculture industry.
- First Nations have comfort with scientific and environmental issues related to aquaculture in order to have made effective decisions on whether and how to engage in aquaculture.
- First Nations developed 'branding' of product.

ANNEX III. LIST OF PARTICIPANTS – BRITISH COLUMBIA WORKSHOP

Industry and Other Stakeholders

NAME	E-MAIL
Angela McCue	Sierra Legal Defence Fund
Bill Vernon	Creative Salmon Company Ltd.
Brad Hicks	Taplow Feeds
Chris Campbell	The Cultured Crustacean Company, Ltd.
Diane Urban	BC Aboriginal Fisheries Commission
Don Tillapaugh	Centre for Shellfish Research - Malaspina University College
Elan Downey	Society for the Positive Awareness of Aquaculture
Jeff Marliave	Marine Science Centre - Vancouver Aquarium
John Holder	JLH Consulting
Keith Reid	BC Shellfish Growers Association
Linda Sams	Marine Harvest Canada
Michelle James	BC Seafood Alliance
Otto Langer	David Suzuki Foundation
Quentin Dodd	Northern Aquaculture
Roberta Stevenson	BC Shellfish Growers Association
Russ Hellberg	Coastal Community Network
Scott Coughlin	Canadian Sablefish Association
Suzanne Connell	Georgia Strait Alliance

Government Stakeholders

NAME	AFFILIATION
Al Martin	British Columbia Ministry of Agriculture, Food and Fisheries
Barron Carswell	British Columbia Ministry of Agriculture, Food and Fisheries
Bev Bravender	Department of Fisheries and Oceans
Bill Mottershead	Land and Water British Columbia Inc.
Brian Riddell	Department of Fisheries and Oceans
Chris Watts	Western Economic Diversification Canada
Dorothee Kieser	Department of Fisheries and Oceans
Duncan Williams	Land and Water British Columbia Inc.
Gary Caine	British Columbia Ministry of Agriculture, Food and Fisheries
John Davis	Department of Fisheries and Oceans
Kirk Stinchcombe	British Columbia Ministry of Agriculture, Food and Fisheries
Klaus Schallié	Canadian Food Inspection Agency
Lee Montgomery	Indian and Northern Affairs Canada
Susan Farlinger	Department of Fisheries and Oceans
Walter Hajen	Environment Canada